

# Introduction

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# Contents

- Introduction
- World Wide Web
- Impact on Systems Integration and Outsourcing
- Internet Service Opportunities
- Issues
- Conclusions and Recommendations

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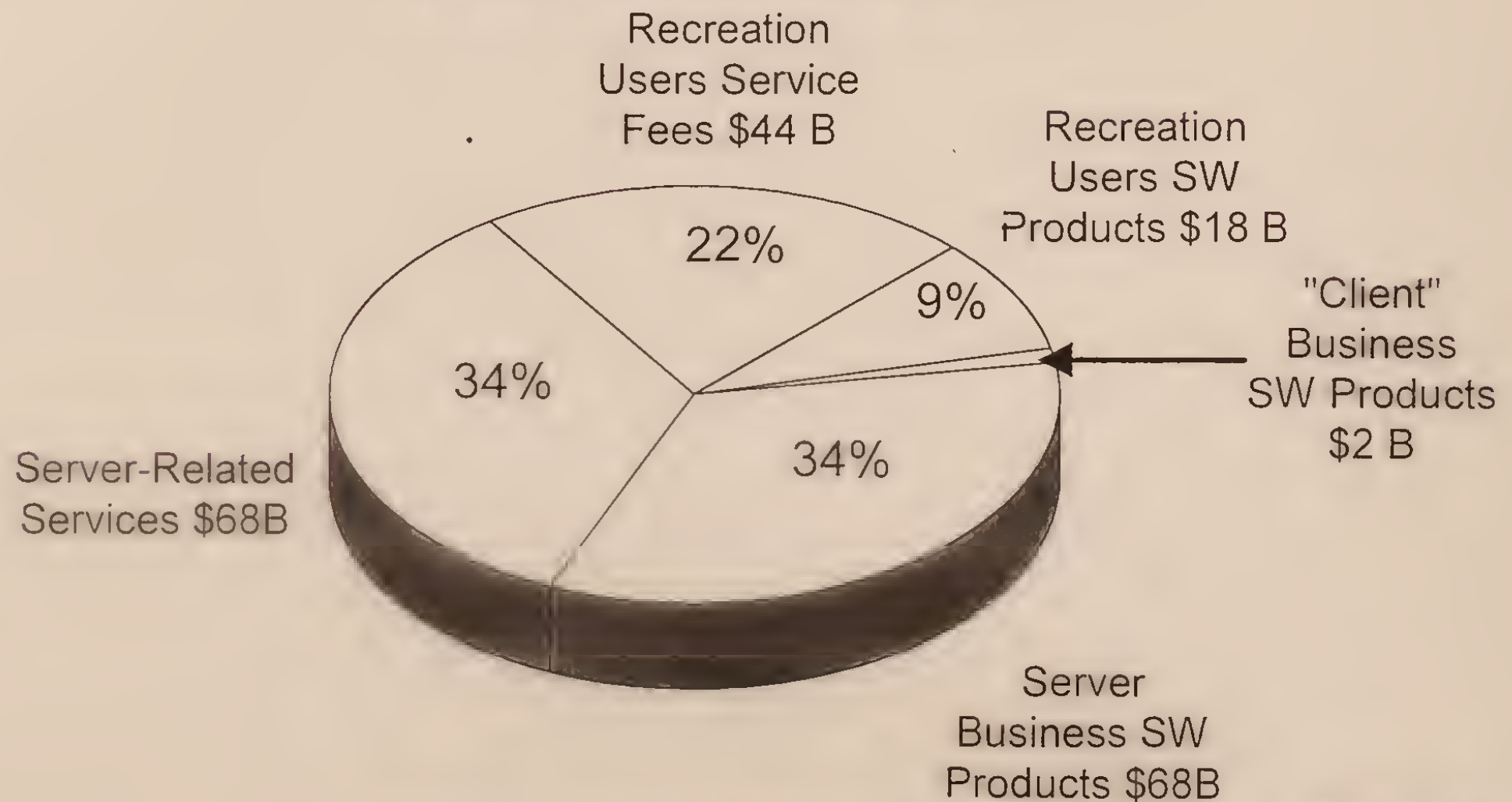
# Introduction

- Worldwide Coverage
- Period: 1995 to 2000
- Based upon INPUT Research Programs

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# Worldwide Internet Market, 1999

(Total Market \$200 Billion)



Source: INPUT's Internet Program

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# The Internet

- Gateway to a Whole New World
- Explosion of the World Wide Web
- Internet Population Growing Exponentially

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# Impact of Internet

3.1 FIRM INFRASTRUCTURE				
3.1 HUMAN RESOURCE MANAGEMENT				
3.5 PROCUREMENT				
4.2 TECHNOLOGY				
INBOUND LOGISTICS	OPERATIONS	OUTBOUND LOGISTICS	SALES/ MARKETING	SERVICE
3.5	3.3	3.4	4.5	4.1

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# World Wide Web

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# World Wide Web

- Tremendous growth
- New developments daily
- Companies, large and small, are scrambling to grasp opportunities

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# World Wide Web

- Work Infrastructure =  
Home Infrastructure
- LAN Protocol =  
WAN Protocol

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# Web-Based Platform Advantages

- Same application runs on all PC platforms.
- World wide access to programs
- Slimmer Operating System

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# Web-Based Platform Advantages

- Easier to Manage than PC-based programs
- Efficient storage of data & files

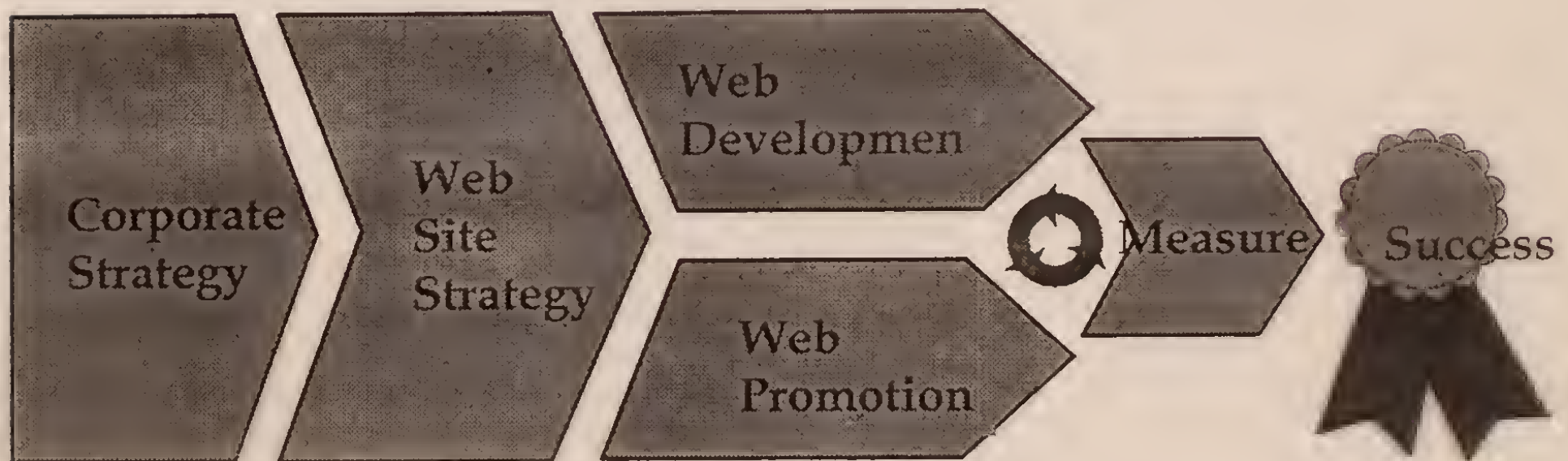
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# Web-Based Platform Advantages

- Minimizes:
  - User Installation
  - Upgrading
  - OS Compatibility

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# Web Site Strategy



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# Federal Express

- Free Electronic Tools For User
- Users Enter Data On FedEx PCs
- Worldwide Web Access
  - Package Tracking
  - Pick-up Requests
- 2.2 Million Packages Shipped Per Day

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# Windham Hill Records

- Worldwide Web Server
  - 300 Images
  - Over 40 Sounds
- Customers Choose
  - Sound Samples
  - Biographies
  - CD Cover Designs
  - Tour Schedules
- Extensive User Profiles
- More Than 1000 Readers Per Day

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# Impact of the Internet on SI and Outsourcing

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# Criticality of Internet Technical Issues

Issue	Average Rating
Security	4.6
Ease of Use	4.3
Line Speeds	4.1
World Wide Web	3.9
HTML	3.7
Image Resolution	3.6
Payment Systems	3.5

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# The Need for Internet Security

- Internet is a Back Door To Systems
- Automated Hacking Tools
- Increased Population with Detailed Technical Understanding

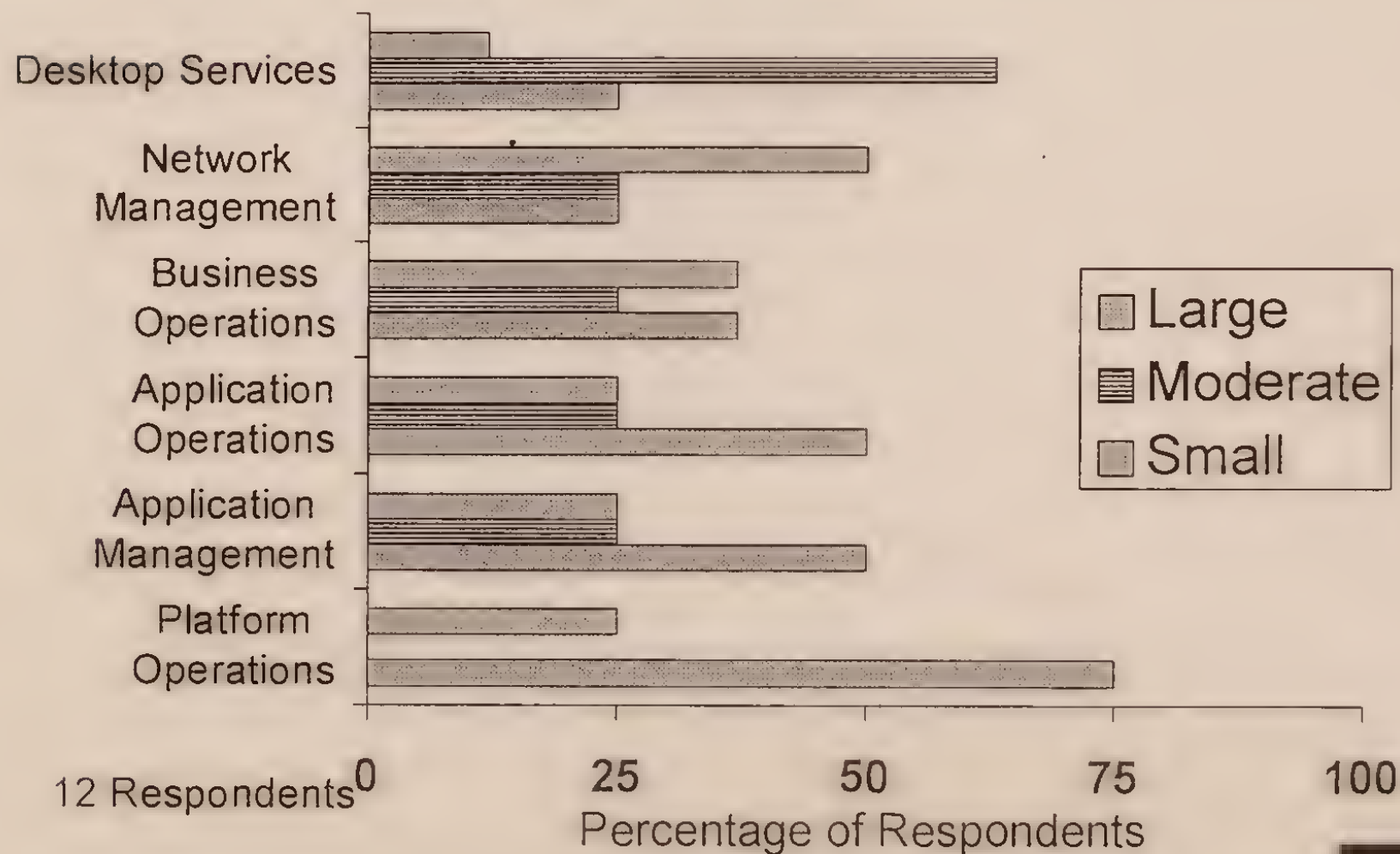
Source: Internet Program

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# Outsourcing Opportunities

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# Impact of the Internet on Outsourcing Services



# Internet Service Opportunities

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# Four Levels of Internet Use

**Access**

**Presence**

**Migration/  
Integration**

**New  
Applications**



**Time**

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# Examples of Services

- **Generic**
  - **Education and Training**
  - **Network Management**
  - **Change Management**
- **Specific to level of Internet Use**
  - **WEB Site Creation**
  - **Applet Library Service**

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# Opportunities For Network Operators

- Directory Services
- Attractive Pricing Plans
- Support And Service
  - Small Business
  - Consumer
- Billing Support

**INPUT**



# Opportunities For Network Operators

- Faster, Higher Bandwidth Communications
- Management Of Internet Services (Outsourcing)
  - Web Site Management
  - Network Management

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# Electronic Commerce and the Internet

- Internet-related Electronic Commerce
  - 1994: \$500 Million (<1%)
  - 1999: \$50 Billion (20%)

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# Electronic Commerce

- Authentication / Encryption
- Billing Systems
- Payment Mechanisms

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Issues

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# Impact on Lotus Notes

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# IBM

Lotus Notes:

How Will Acquisition Be Absorbed?

How Will InterNotes Evolve?

How will Notes Compete With  
Internet-Based Products?

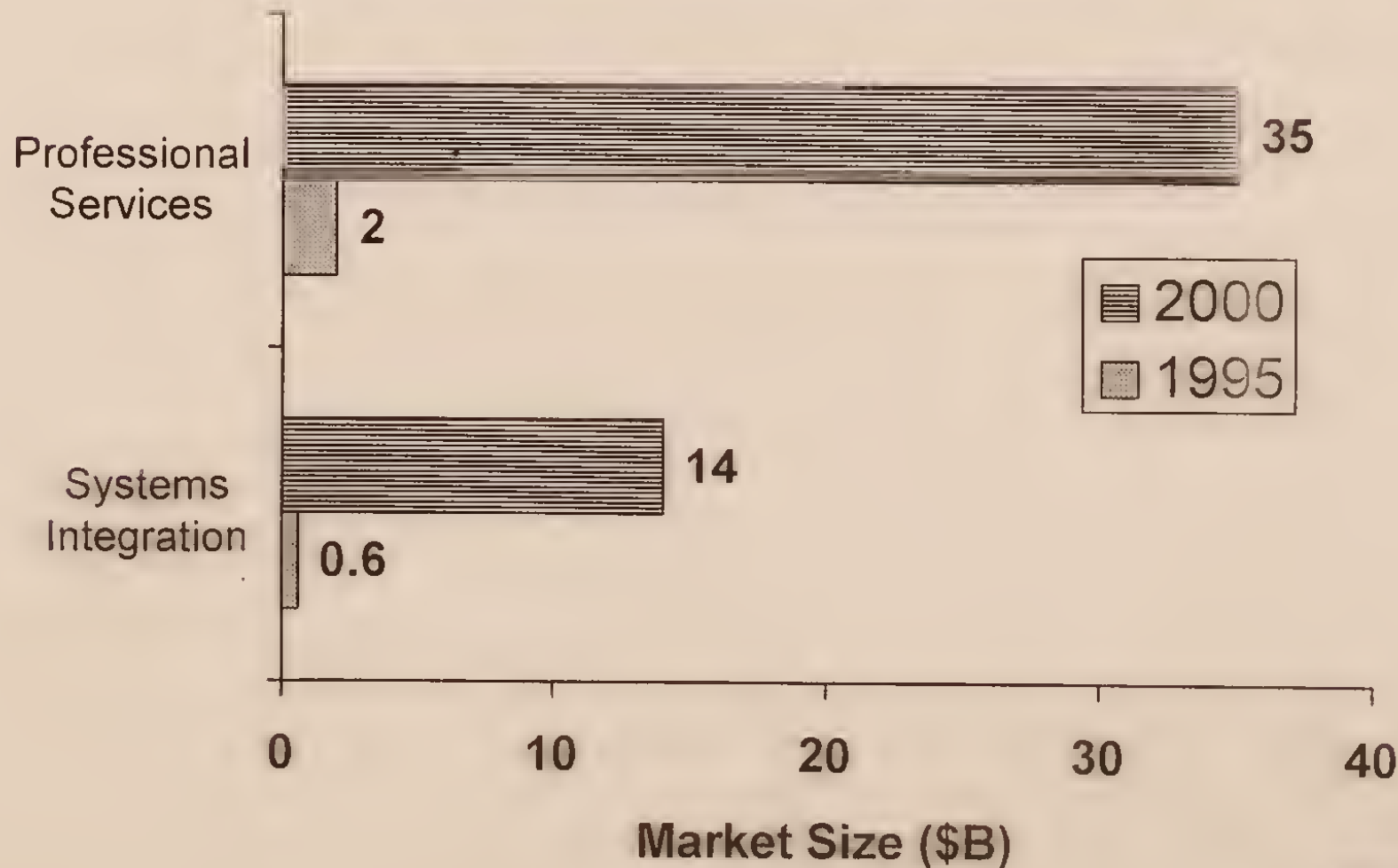
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# Messaging Trends

- Lotus Notes
  - Public Services - Worldcom, AT&T
  - Oracle/Lotus Interfaces
- Worldwide Web
  - Billboards Of The Information Highway

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# Worldwide Internet SI and PS Forecast, 1995-2000





# Recommendations

- Exploit security expertise
- Invest in inter-enterprise technology and applications
- Market internally as well as externally
- Learn from CSC experiences

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# Potential Business Users

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# Business Banking

- Money Transfer and Swift
- Electronic Commerce
- Other Payment Services
- Corporate Lending
- Cash Management

# Home Banking

- Balance Inquiry
- Customer Profiling
- Quicken Interfaces

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# Trading

- Customer Credit
- Communication Among:
  - Traders
  - Dealers
  - Financial Systems
- Automated Trading Systems

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# Retail

- Link Buyers and Suppliers
- Data Warehousing
- Category Management
- Online Catalogs

# Health Care

- Managed Care-Related
- Players Must Compete Across the Board
- US and Europe

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# Information Intermediary

- Real Estate Brokers
- Insurance Brokers
- Travel Agencies



# Telephone Companies

- Billing Systems
- Consumer Messaging - Email
- Directory Services
- Access

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# Entertainment

- Online Gaming Systems
- Reservations for:
  - Movie
  - Theater
  - Sporting Events

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# Issues

- Advertising
  - Where Is It Appropriate?
  - Acceptance
- Reliability
- Network Capacity And Performance

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# Issues

- Security
- Internet Funding
  - Business Models
  - Investment Recovery
- Image Projected

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# Conclusions and Recommendations

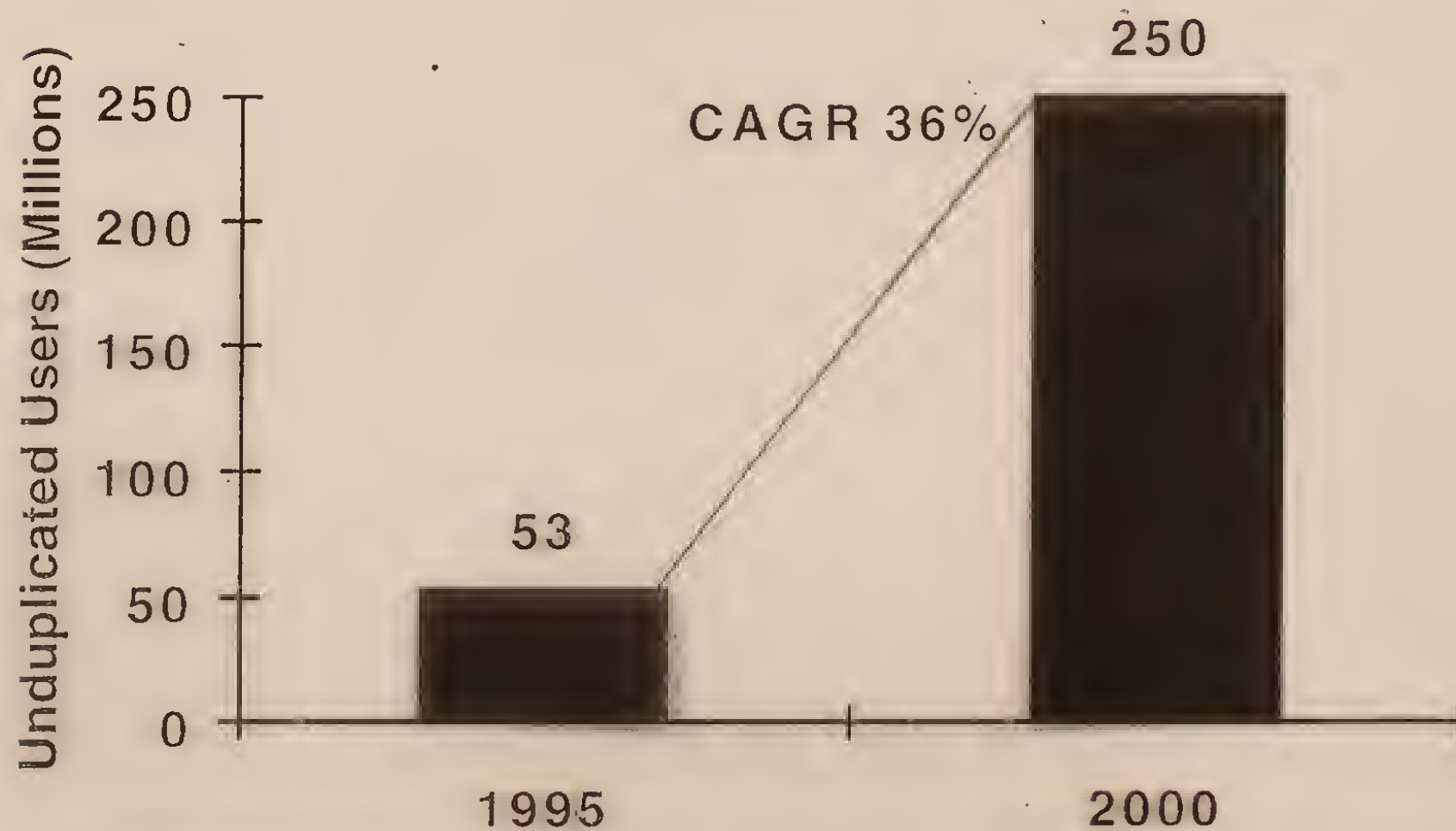
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# Observations

- Will Alternative Information Channels Be More Efficient Or Effective?
  - In Some Cases Users Will Pay A Premium For Private Networks
  - There Will Be Many Opportunities For Improving Performance

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# Worldwide Internet Population



Source: Internet Program

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# Third Generation Systems

Internet Is One Way To Connect

3rd

**Distributed Servers**  
**Open Clients**  
*Inter-Enterprise*

2nd

**Multiple Servers**  
**PC/Workstation Clients**  
*Intra-Enterprise*

1st

**Single Server**  
**Single Platform Client**  
*Departmental*

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# World Wide Web Is Not the “Killer” Application

- Underlying technology
- Platform upon which applications are developed
- The paradigm shift occurring today is...

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# Publishing

- First Killer Application
- Demonstrates the potential of a network-based platform
- Control of access = control the content

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# Processed Content Sharing

- Connected to a variety of legacy, back-office systems
- The FedEx web site is example
- Enterprise content will be liberated

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# History Repeats Itself

- Desktop publishing “Killer Ap.” for PCs
- Now it’s network publishing
- WWW creators invented
  - network platform
  - the application

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# History Repeats Itself

- PCs evolved into client/server network components
- Likewise, Web connected to legacy servers and back office applications

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# Platform Shift

- To the Web:
  - From Desk Top PC
  - From Client/Server
- The shift is occurring rapidly:
  - Few current examples
  - 50 % migration by 2000

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# The Shift Will Result In...

- Increased demand for slimmer operating systems
- Hollow PCs
- Processing requirements shift to the server

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# The Shift Will Result in...

- Need for Web Platform Development Tools
- PC-based Applications Migrate to the Web-based Platform
- New Applications

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# Conclusion

- The World Wide Web is more than:
  - Information Revolution
  - Media Revolution
  - Communications Revolution
  - Computing Revolution

# Conclusion

It's the platform shift that is  
enabling all of the above

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# Consulting Services

- Needs assessment
- Reengineering
  - Content Management
  - Sales & Marketing
- IT Architecture
- Implementation

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# Internet Commercial Players

*Friend  
or Foe?*

## Online Service Providers

Advantis/IBM  
America Online  
CompuServe  
Microsoft  
Prodigy

AT&T  
BT  
MCI  
DT  
TCI  
Sprint

## Telcos & Cable

Andersen  
EDS  
IBM/ISSC  
Digital

## Systems Integrators

## Content Providers

Disney  
Individual  
Lexis  
News Corp.  
Times-Mirror  
Windham Hill

## Hardware & Systems

Digital  
IBM  
SGI  
SNI  
Sun

Netcom  
UUNET  
PSI  
BBN Planet  
DIGEX  
Pipeline

## ISPs

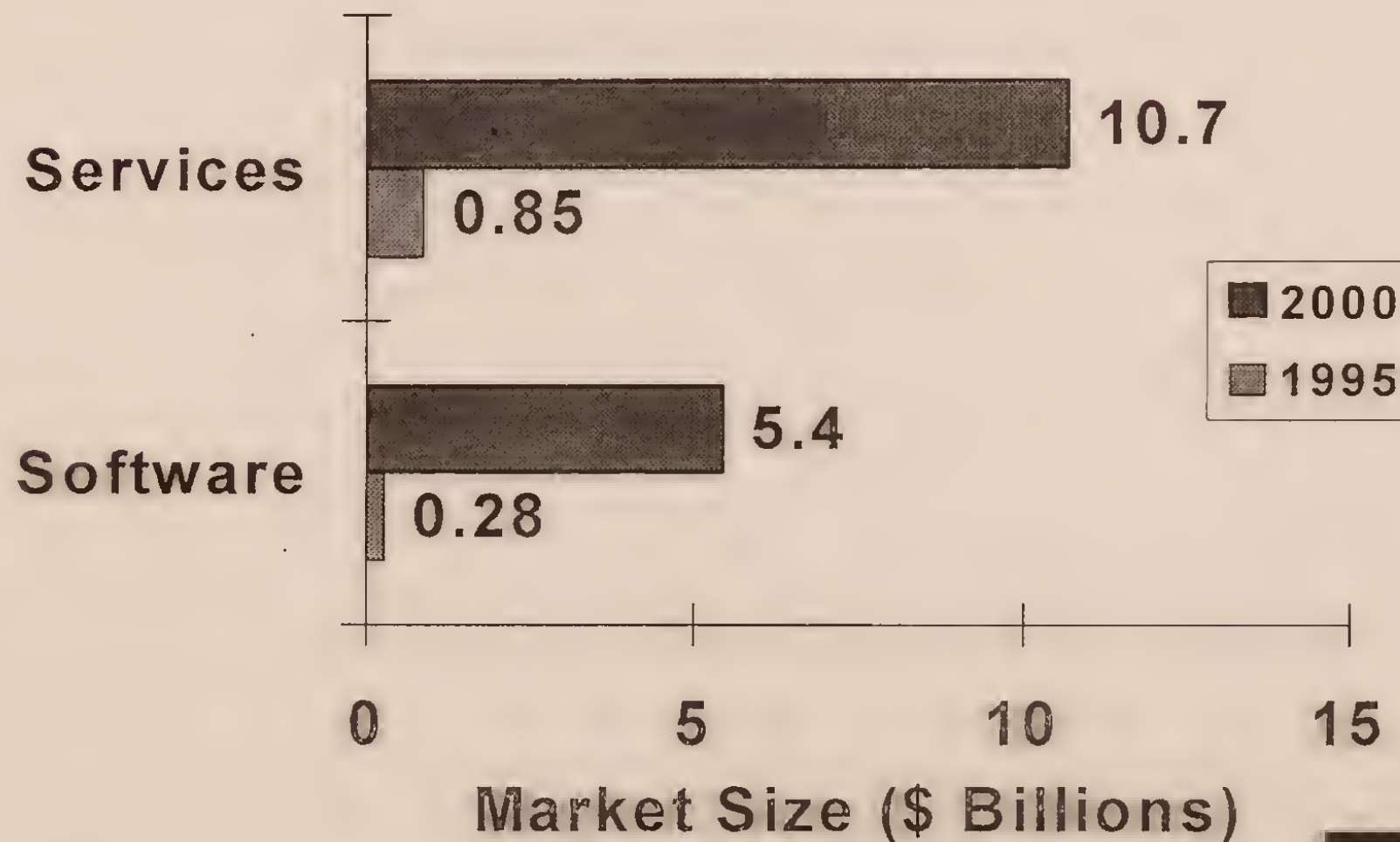
## Software

Netscape  
Open Market  
Quarterdeck  
Spider Technologies  
Spyglass

*There are many more!*



# Firewall Market - Software & Services



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# Ratings of Importance of Potential Internet Benefits

Potential Internet Benefit	Average Rating
Delivering More Information	4.4
Receiving Feedback from Customers	4.3
Enhancing Relationships with Customers	4.2
Responding more Quickly to Customers	4.2
Delivering Sales Information Less Expensively	4.1
Promoting Products Through New Media	4.1



